


methacrylate, hydroxybutyl acrylate or alternatively certain hydroxymethylated derivatives of diacetone acrylamide, for example N-methylolacrylamide, N-methylolmaleamide, N-propanolacrylamide, N-methylolmethacrylamide, N-methylol-p-vinylbenzamide.

IN THE CLAIMS:

Please cancel claims 1-37 without prejudice or disclaimer. Please add new claims 38-106 as follows:

--38. (New) A cosmetic composition for keratinous fibers comprising, in a cosmetically acceptable medium, at least one tacky polymer having a glass transition temperature ( $T_g$ ) of less than  $20^{\circ}\text{C}$  and at least one fixing polymer having a glass transition temperature ( $T_g$ ) greater than  $15^{\circ}\text{C}$ .



39. (New) A composition according to claim 38, wherein said at least one tacky polymer has a peeling profile defined by at least a maximum peeling force  $F_{\text{max}} > 3$  Newtons.

40. (New) A composition according to claim 39, wherein said at least one tacky polymer has a peeling profile defined by at least a maximum peeling force  $F_{\text{max}} > 5$  Newtons.

41. (New) A composition according to claim 38, wherein said keratinous fibers are chosen from hair.

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42. (New) A composition according to claim 39, wherein when said glass transition temperature of said at least one tacky polymer is less than  $-15^{\circ}\text{C}$ , and wherein said peeling profile is further defined by at least an energy for separation  $E_{s(MV)}$  of less than  $300\text{ }\mu\text{J}$ .

43. (New) A composition according to claim 40, wherein when said glass transition temperature of said at least one tacky polymer is less than  $-15^{\circ}\text{C}$ , and wherein said peeling profile is further defined by at least an energy for separation  $E_{s(MV)}$  of less than  $300\text{ }\mu\text{J}$ .

44. (New) A composition according to claim 38, wherein said at least one tacky polymer is chosen from branched sulfonic polyester polymers and (meth)acrylic ester polymers.

45. (New) A composition according to claim 38, wherein said at least one tacky polymer is present in an amount greater than 0.01% by weight relative to the total weight of the composition.

46. (New) A composition according to claim 45, wherein said at least one tacky polymer is present in an amount greater than 0.1% by weight relative to the total weight of the composition.

47. (New) A composition according to claim 46, wherein said at least one tacky polymer is present in an amount greater than 0.5% by weight relative to the total weight of the composition.

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48. (New) A composition according to claim 38, wherein said at least one fixing polymer has a glass transition temperature (T<sub>g</sub>) greater than 25°C.

49. (New) A composition according to claim 38, wherein said at least one fixing polymer is present in an amount greater than 0.01% by weight relative to the total weight of the composition.

50. (New) A composition according to claim 49, wherein said at least one fixing polymer is present in an amount greater than 0.1% by weight relative to the total weight of the composition.

51. (New) A composition according to claim 44, wherein said branched sulfonic polyester polymers are formed from: (i) at least one dicarboxylic acid carrying two functional groups, wherein said functional groups are chosen from functional groups other than sulfonic groups;

(ii) at least one sulfomonomer comprising at least one sulfonic group and carrying two functional groups, wherein said functional groups are chosen from hydroxyl groups, carboxyl groups and amino groups;


(iii) at least one diol and optionally at least one diamine;

(iv) optionally at least one monomer carrying two functional groups, wherein said at least one monomer is chosen from hydroxycarboxylic acids, and aminocarboxylic acids; and

(v) at least one compound carrying at least three functional groups chosen from amino groups, alcohol groups, and carboxylic acid groups.

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52. (New) A composition according to claim 51, wherein said branched sulfonic polyester polymers are formed from:


- (i) said at least one dicarboxylic acid carrying two functional groups, wherein said functional groups are chosen from functional groups other than sulfonic groups;
- (ii) 2 to 15 relative mol% of said at least one sulfomonomer comprising at least one sulfonic group and carrying two functional groups, wherein said functional groups are chosen from hydroxyl groups, carboxyl groups and amino groups;
- (iii) said at least one diol and optionally said at least one diamine;
- (iv) 0 to 40 relative mol% of said at least one monomer carrying two functional groups, wherein said at least one monomer is chosen from hydroxycarboxylic acids, and aminocarboxylic acids; and
- (v) 0.1 to 40 relative mol% of said at least one compound carrying at least three functional groups chosen from amino groups, alcohol groups, and carboxylic acid groups.

53. (New) A composition according to claim 51, wherein said carboxylic acid functions are present in a total number equal to a total number of said diol and said optional diamine functions combined.

54. (New) A composition according to claim 51, wherein said at least one dicarboxylic acid carrying two functional groups (i) is chosen from aliphatic dicarboxylic acids, alicyclic dicarboxylic acids, and aromatic dicarboxylic acids.

55. (New) A composition according to claim 51, wherein said at least one dicarboxylic acid carrying two functional groups (i) is chosen from 1,4-cyclohexanedioic acid, succinic acid, glutaric acid, adipic acid, azelaic acid, sebacic acid, fumaric acid,

maleic acid, 1,3-cyclohexanedioic acid, phthalic acid, terephthalic acid, and isophthalic acid.



56. (New) A composition according to claim 51, wherein said at least one sulfomonomer comprising at least one sulfonic group and carrying two functional groups (ii) is chosen from dicarboxylic acids comprising at least one metal sulfonate group, dicarboxylic acid esters comprising at least one metal sulfonate group, glycols comprising at least one metal sulfonate group, and hydroxy acids comprising at least one metal sulfonate group.

57. (New) A composition according to claim 51, wherein said at least one diol of (iii) is chosen from alkanediols and polyalkylene diols.

58. (New) A composition according to claim 51, wherein said at least one diol of (iii) is chosen from ethylene glycol, propylene glycol, diethylene glycol, triethylene glycol, and polypropylene glycol.

59. (New) A composition according to claim 51, wherein said at least one diamine of (iii) is chosen from alkanediamines and polyalkylenediamines.

60. (New) A composition according claim 51, wherein said at least one compound carrying at least three functional groups chosen from amino groups, alcohol groups, and carboxylic acid groups (v) is chosen from trimethylolethane, trimethylolpropane, glycerol, pentaerythritol, sorbitol, trimellitic anhydride, erythritol, threitol, dipentaerythritol, pyromellitic dianhydride, and dimethylpropionic acid.

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61. (New) A composition according to claim 44, wherein said (meth)acrylic ester polymers comprise:

(a) from 9 to 99% by weight of at least one (meth)acrylic ester monomeric unit relative to the total weight of the polymer;

(b) up to 90% of at least one comonomeric unit; and

(c) from 1 to 10% of at least one vinylidene monomeric unit comprising at least one functional group chosen from carboxyl groups and hydroxyl groups.

62. (New) A composition according to claim 61, wherein said at least one (meth)acrylic ester monomeric unit (a) is chosen from monomeric units derived from at least one monomer of formulae (I) and (II):




wherein R is chosen from C<sub>1</sub> to C<sub>18</sub> alkyl groups, alkoxy(C<sub>2</sub> to C<sub>8</sub> alkyl) groups, alkylthio(C<sub>2</sub> to C<sub>8</sub> alkyl) groups, and C<sub>2</sub> to C<sub>8</sub> cyanoalkyl groups.

63. (New) A composition according to claim 61, wherein said at least one (meth)acrylic ester monomeric unit (a) is derived from at least one monomer chosen from methyl acrylate, ethyl acrylate, n-butyl acrylate, isobutyl acrylate, hexyl acrylate, octyl acrylate, 2-ethylhexyl acrylate, decyl acrylate, methoxyacrylate, ethoxyacrylate, methylthiomethyl acrylate and cyanopropyl acrylate.

64. (New) A composition according to claim 61, wherein said at least one comonomeric unit (b) comprises at least one vinylidene group comprising terminal CH<sub>2</sub>=C- groups.

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65. (New) A composition according to claim 64, wherein said at least one comonomeric unit (b) is derived from at least one monomer chosen from:

- acrylic esters,
- methacrylic esters,
- vinyl halides,
- vinyl esters,
- allyl esters,
- aromatic vinyls, and
- vinyl nitriles.

66. (New) A composition according to claim 65, wherein said acrylic esters and said methacrylic esters are chosen from methyl methacrylate, ethyl methacrylate, n-butyl methacrylate, and methyl ethacrylate.

67. (New) A composition according to claim 65, wherein said vinyl halides are chosen from vinyl chloride.

68. (New) A composition according to claim 65, wherein said vinyl esters are chosen from vinyl acetate, vinyl butyrate, and vinyl chloroacetate.

69. (New) A process for manufacturing a cosmetic hairstyling formulation comprising including in said cosmetic hairstyling formulation at least one tacky polymer having a glass transition temperature ( $T_g$ ) of less than 20°C and at least one fixing polymer having a glass transition temperature ( $T_g$ ) greater than 15°C.

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70. (New) A composition according to claim 65, wherein said aromatic vinyls are chosen from styrene, vinyltoluene, chloromethylstyrene, and vinylnaphthalene.

71. (New) A composition according to claim 65, wherein said vinyl nitriles are chosen from acrylonitrile and methacrylonitrile.

72. (New) A composition according to claim 61, wherein said at least one vinylidene monomeric unit (c) comprises at least one hydroxyl group.

73. (New) A composition according to claim 72, wherein said at least one vinylidene monomeric unit (c) is derived from at least one acrylate monomer comprising a terminal hydroxyl group.

74. (New) A composition according to claim 73, wherein said at least one vinylidene monomeric unit (c) is derived from hydroxyethyl acrylate, hydroxyethyl methacrylate, hydroxypropyl acrylate, hydroxypropyl methacrylate, hydroxybutyl acrylate, and hydroxymethylated derivatives of diacetone acrylamide.


75. (New) A composition according to claim 74, wherein said hydroxymethylated derivatives of diacetone acrylamide are chosen from N-methylolacrylamide, N-methylolmaleamide, N-propanolacrylamide, N-methylolmethacrylamide, and N-methylol-p-vinylbenzamide.

76. (New) A composition according to claim 61, wherein said at least one vinylidene monomeric unit (c) comprises at least one carboxyl group.

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77. (New) A composition according to claim 76, wherein said at least one vinylidene monomeric unit (c) is derived from at least one monomer chosen from acrylic acid, methacrylic acid, itaconic acid, citraconic acid, and maleic acid.

78. (New) A composition according to claim 38, wherein said at least one fixing polymer of said composition is chosen from anionic, cationic, amphoteric, and nonionic fixing polymers.


79. (New) A composition according to claim 38, wherein said at least one fixing polymer is either solubilized in said composition or dispersed in said composition.

80. (New) A composition according to claim 79, wherein said cationic fixing polymers are chosen from polymers with a weight-average molecular weight ranging from 500 to 5,000,000 and comprising at least one amine group chosen from primary, secondary, tertiary and quaternary amine groups, wherein said amine groups are part of the polymer chain or are directly attached to the polymer chain.

81. (New) A composition according to claim 80, wherein said cationic fixing polymers have a weight-average molecular weight ranging from 1000 to 3,000,000.

82. (New) A composition according to claim 78, wherein said anionic fixing polymers are chosen from polymers comprising at least one group derived from carboxylic acids, sulfonic acid, and phosphoric acid and having a weight-average molecular weight ranging from 500 to 5,000,000.

83. (New) A composition according to claim 78, wherein said amphoteric fixing polymers are chosen from:



(1) polymers comprising at least one unit B and at least one unit C randomly distributed in the polymer chain of said polymers, wherein said at least one unit B is chosen from monomeric units derived from at least one monomer comprising at least one basic functional group, and wherein said at least one unit C is chosen from monomeric units derived from at least one acidic monomer comprising at least one group chosen from carboxylic groups and sulfonic groups,

(2) polymers comprising at least one unit B and at least one unit C randomly distributed in the polymer chain of said polymers, wherein said at least one unit B and said at least one unit C are each chosen from monomeric units derived from at least one zwitterionic monomer chosen from zwitterionic monomers of carboxybetaines and zwitterionic monomers of sulfobetaines,

(3) polymers comprising a cationic polymer chain formed from at least one unit B and at least one unit C, wherein said cationic polymer chain comprises at least one amine group chosen from primary, secondary, tertiary, and quaternary amine groups, wherein at least one of said at least one amine group carries a group chosen from carboxylic groups and sulfonic groups, wherein said carried group is attached by way of a hydrocarbon linker, and

(4) polymers comprising at least one ethylene- $\alpha,\beta$ -dicarboxylic unit wherein one of said two carboxylic groups has been caused to react with at least one polyamine comprising at least one amine group chosen from primary and secondary amine groups.

84. (New) A composition according to claim 83, wherein, when said at least one unit B in (1) is chosen from monomeric units derived from at least one monomer

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comprising at least one basic functional group, said at least one basic functional group being a basic nitrogen atom.

85. (New) A composition according to claim 78, wherein said nonionic fixing polymers are chosen from polyurethanes.

86. (New) A composition according to claim 38, wherein said at least one fixing polymer is a soluble polymer.

87. (New) A composition according to claim 86, wherein said soluble polymer is chosen from silicone-containing acrylic polymers, polymers formed from at least one vinylpyrrolidone monomer, and polymers formed from at least one vinylcaprolactam monomer.

88. (New) A composition according to claim 38, wherein said at least one fixing polymer is dispersed in said composition and is chosen from polymers formed from at least one acrylic monomer, polymers formed from at least one acrylic ester monomer, polymers formed from at least one methacrylic monomer, polymers formed from at least one methacrylic ester monomer, and polymers formed from at least one styrene monomer.

89. (New) A vaporizable composition, a foam, a gel or a lotion comprising a cosmetic composition for keratinous fibers, which comprises, in a cosmetically acceptable medium, at least one tacky polymer having a glass transition temperature (T<sub>g</sub>) of less than 20°C and at least one fixing polymer having a glass transition temperature (T<sub>g</sub>) greater than 15°C.

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90. (New) A composition according to claim 38, wherein said cosmetically acceptable medium comprises at least one solvent chosen from water and alcohols.

91. (New) A composition according to claim 38 further comprising at least one additive chosen from gelling agents and foaming agents.

92. (New) A composition according to claim 38 further comprising at least one propellant.

93. (New) A composition according to claim 92, wherein said at least one propellant is chosen from compressed gases, and liquefied gases.

94. (New) A composition according to claim 92, wherein said at least one propellant is chosen from gases.


95. (New) A composition according to claim 92, wherein said at least one propellant is chosen from gases which are soluble in said composition.

96. (New) A composition according to claim 93, wherein said compressed gases and liquified gases are chosen from compressed air, carbon dioxide, and nitrogen.

97. (New) A composition according to claim 95, wherein said gases which are soluble in said composition are chosen from dimethyl ether and fluorinated hydrocarbons.

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98. (New) An aerosol device comprising (1) a compartment comprising an aerosol composition comprising a liquid phase and at least one propellant, wherein said liquid phase comprises, in an appropriate solvent, a cosmetic composition for keratinous fibers comprising, in a cosmetically acceptable medium, at least one tacky polymer having a glass transition temperature ( $T_g$ ) of less than  $20^{\circ}\text{C}$  and at least one fixing polymer having a glass transition temperature ( $T_g$ ) greater than  $15^{\circ}\text{C}$ , and (2) a member for distributing said aerosol composition.

99. (New) A process of treating keratinous fibers comprising applying to said fibers, before and/or after shaping a hairstyle, a cosmetic composition for keratinous fibers comprising, in a cosmetically acceptable medium, at least one tacky polymer having a glass transition temperature ( $T_g$ ) of less than  $20^{\circ}\text{C}$  and at least one fixing polymer having a glass transition temperature ( $T_g$ ) greater than  $15^{\circ}\text{C}$ .

100. (New) A process according to claim 99, wherein said keratinous fibers are chosen from hair.

101. (New) A composition according to claim 39, wherein said maximum peeling force  $F_{\text{max}}$  is measured with an extensometer and is a maximum tensile force for peeling apart  $38 \text{ mm}^2$  coated surfaces of two rigid, inert, and nonabsorbent supports (A) and (B) placed opposite each other, wherein said surfaces have been (1) coated with a tacky polymer dissolved at 5% in a solvent, at the rate of  $1 \text{ mg/mm}^2$ , (2) dried for 24 hours at  $22^{\circ}\text{C}$  under a relative humidity of 50%, (3) compressed for 20 seconds under a force of 3 Newtons, and (4) pulled apart for 30 seconds at a rate of  $20 \text{ mm/min}$ .

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102. (New) A composition according to claim 101, wherein said solvent is chosen from aqueous solvents, aqueous-alcoholic solvents, and alcoholic solvents.

103. (New) A composition according to claim 101, wherein said supports (A) and (B) are chosen from polyethylene supports, polypropylene supports, metal alloy supports, and glass supports.

104. (New) A composition according to claim 42, wherein said  $E_{s(M/V)}$  is an amount of energy provided by an extensometer for peeling apart  $38 \text{ mm}^2$  coated surfaces of two rigid, inert, and nonabsorbent supports (C) and (D) placed opposite each other, wherein one of said two supports comprises cut glass and a second of said two supports is chosen from polyethylene supports, polypropylene supports, metal alloy supports, and glass supports, and wherein said surfaces have been (1) coated with a tacky polymer dissolved at 5% in a solvent, at the rate of  $1 \text{ mg/mm}^2$ , (2) dried for 24 hours at  $22^\circ\text{C}$  under a relative humidity of 50%, (3) compressed for 20 seconds under a force of 3 Newtons, and (4) pulled apart for 30 seconds at a rate of  $20 \text{ mm/min}$ .

105. (New) A composition according to claim 104, wherein said solvent is chosen from aqueous solvents, aqueous-alcoholic solvents, and alcoholic solvents.

106. (New) A composition according to claim 104, wherein said  $E_{s(M/V)}$  is an amount of energy calculated by means of the following formula:

$$\int_{Xs1 + 0.05}^{Xs2} F(x)dx$$